

REMARKS

Claims 1, 2, 4, 5 and 7-10 are now pending in the present application. Claims 1, 7 and 8 have been amended. Claims 3 and 6 were canceled by a previous Amendment. Claims 1, 4 and 7 are independent. Reconsideration of this application, as amended, is respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 1, 2, 4, 5 and 7-10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Lutz et al, USPN 6,592,465. This rejection is respectfully traversed.

The present invention is directed to a ball trajectory measuring apparatus. Independent claims 1, 4 and 7 exemplify the present invention and recite a combination of elements including the recitations "a calculating portion for calculating position coordinates of the ball based on image data obtained by the first, second and third cameras, and position coordinates, directions of optical axes and angles of view of the respective cameras" and "wherein the angle of view of the first camera partially overlaps with that of the second camera, and the angle of view of the second camera is related to that of the first camera based on ball images which are simultaneously photographed by the first camera and the second camera." In addition, independent claim 7 recites "wherein the first camera and the second camera are located at substantially the same position behind the launch point, said first and second cameras are inclined upward from a horizontal direction, and an angle of

inclination of said first camera is greater than an angle of inclination of said second camera.” Applicant respectfully submits that the Lutz et al. reference relied on by the Examiner fails to teach or suggest the present invention as recited in independent claims 1, 4 and 7.

Referring to FIGS. 7 and 8 of Lutz et al., cameras 314a and 316 are provided behind the launch point and after the drop point, respectively. In addition, cameras 312a-312d are provided between the launch point and the drop point and aligned with the flight path FP. Referring to the Examiner's Office Action dated June 1, 2004, on page 2, the Examiner states that Lutz et al. “discloses a calculating portion for calculating position coordinates of the ball based on image data obtained by the first, second and third cameras, and position coordinates, directions of optical axes and angles of view of the respective cameras.” The Examiner refers to column 6, line 51 through column 9, line 67 for this teaching. However, this portion of Lutz et al. is silent about calculating the position coordinates, directions of optical axes and the angles of view of the first, second and third cameras as recited in independent claims 1, 4 and 7 of the present invention. In view of this, the Lutz et al. reference fails to anticipate the independent claims of the present invention for at least this reason. If the Examiner believes that the Lutz et al. reference discloses this aspect of the present invention, it is requested that the Examiner explain this in the next Official Communication.

In addition, in Lutz et al., there is no description with regard to relating the angles of view of the cameras. Specifically, there is no disclosure in Lutz et al. of the first and second cameras having an angle of view that is related to each other “based on ball images which

are simultaneously photographed by the first camera and the second camera” as recited in independent claims 1, 4 and 7 of the present invention.

Referring to page 8, lines 22-32 of the present specification, the above aspect of the present invention is further described. Specifically, it is described that the first camera and the second camera are synchronized with each other. In addition, it is described that the angle of view of the first camera and the angle of view of the second camera are related to each other based on data of the ball images. In other words, the correspondence of the coordinates in the angle of view of the first camera to those in the angle of the second camera is grasped by calculating means (see page 8, lines 30-32 of the present specification).

In Lutz et al., plural cameras are synchronized with each other. However, Lutz et al. does not disclose relating the plural angles of view based on ball images. It appears that the Examiner has taken the position that “synchronizing” and “relating based on ball images” are equivalent. However, this is not the case. Synchronizing simply means that each camera is timed to operate at a particular time during the flight of the ball. However, relating the angles of view based on ball images means that the calculating means calculates the correspondence or relationship of the coordinates of the angles of view of the first and second cameras. Furthermore, the relationship is based on data of the ball images.

Since the Lutz et al. reference fails to disclose relating the angles of views of the cameras, Applicant respectfully submits that the Lutz et al. reference fails to anticipate independent claims 1, 4 and 7 of the present invention.

In addition to the above, Applicant submits that the Lutz et al. reference fails to disclose first, second and third cameras as recited in independent claims 1, 4 and 7. In independent claims 1 and 7, first and second cameras photograph a back of a flying ball and a third camera photographs a front of the flying ball. In Figure 1 of Lutz, there is no camera that photographs the front of the ball. The cameras 14a and 14b photograph the back of the ball 22 and the cameras 12a-12d photograph the bottom of the ball 22. In Figures 5-8 and 10, only the cameras 114a, 214a, 314a, 314a and 514, respectively, photograph the back of the ball 22. Finally, in Figure 9, two cameras 414b and 414a photograph the back of the ball 22; however, there is no camera that photographs the front of the ball. In view of this, none of the embodiments of Lutz et al. anticipate independent claims 1 and 7 of the present invention for this additional reason.

With regard to independent claim 4, this claim recites first and second cameras that photograph a back of the ball and a third camera that photographs the front of the ball. Since Figures 1 and 9 do not disclose any cameras located after the ball drop point and Figures 5-8 and 10 only disclose one camera after the ball drop point, Lutz et al. fails to disclose first and second cameras that photograph the front of the ball as recited in independent claim 4 of the present invention. Therefore, Lutz et al. fails to anticipate independent claim 4 for this additional reason.

With specific regard to independent claim 7, this claim also recites "wherein the first camera and the second camera are located at substantially the same position behind the launch point, said first and second cameras are inclined upward from a horizontal direction, and an angle of inclination of said first camera is greater than an angle of inclination of said second camera." In the Examiner's Office Action, the Examiner has provided no comments with regard to how the Lutz et al. reference anticipates the subject matter of independent claim 7. Referring to Figure 1 of Lutz et al., the cameras that photograph the back of the flying ball (the first and second cameras of claim 7) would be the cameras 14a and 14b. Since the cameras 14a and 14b are not "located at substantially the same position behind the launch point," Applicant submits that Figure 1 of the Lutz et al. reference fails to anticipate independent claim 7 of the present invention for this additional reason.

With regard to Figures 5-8 and 10 of Lutz et al., there is only one camera (114a, 214a, 314a, 314a and 314, respectively) in each of these figures that is located behind the launch point. In view of this, Figures 5-8 and 10 fail to disclose two cameras (first and second cameras) "located at substantially the same position behind the launch point" as recited in independent claim 7. Therefore, Figures 5-8 and 10 also fail to anticipate independent claim 7 for this additional reason.

With regard to Figure 9, there are two cameras (414a and 414b) that are located behind the launch point. However, these cameras are not located "at substantially the same position" as recited in independent claim 7. Referring to column 11, line 58 to column 12, line 22 of Lutz et al., Figure 9 is described. It is clear from this description that the camera 414b is

located "vertically above" the camera 414a, specifically, "about 30 feet above" the camera 114a. In view of this, these cameras are not located as recited in independent claim 7 of the present invention.

In addition, claim 7 states that "an angle of inclination of said first camera is greater than an angle of inclination of said second camera." Figure 9 clearly shows that both cameras have the same angle of inclination, i.e., an angle of inclination of zero. Therefore, Figure 9 of Lutz et al. fails to anticipate claim 7 of the present invention for this additional reason.

With regard to dependent claims 2, 5 and 8-10, Applicant respectfully submits that these claims are allowable due to their respective dependence upon allowable independent claims 1 and 4, as well as due to the additional recitations in these claims.

With specific regard to dependent claims 8-10, the Examiner has provided no explanation as to how the Lutz et al. reference discloses the aspects of the present invention recited in these claims. It is requested that the Examiner explain his position in the next Official Communication.

In view of the above amendments and remarks, Applicant respectfully submits that claims 1, 2, 4, and 7-10 clearly define the present invention over the Lutz et al. reference relied on by the Examiner. Accordingly, reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 102 are respectfully requested.

CONCLUSION

Since the remaining references cited by the Examiner have not been utilized to reject the claims, but merely to show the state-of-the-art, no further comments are deemed necessary with respect thereto.

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.


Applicant respectfully petitions under the provisions of 37 C.F.R. § 1.136(a) and § 1.17 for a one-month extension of time in which to respond to the Examiner's Office Action. The Extension of Time Fee in the amount of **\$120.00** is attached hereto.

In the event there are any matters remaining in this application, the Examiner is invited to contact Paul C. Lewis, Registration No. 43,368 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
Paul C. Lewis, #43,368

PCL/cl
3673-0163P

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000